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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,579	03/12/2004	Kazuko Shinozaki	081356-0210	6471

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FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

KUMAR, VINOD

ART UNIT	PAPER NUMBER
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1638

MAIL DATE	DELIVERY MODE
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03/01/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/798,579	Applicant(s) SHINOZAKI ET AL.	
	Examiner VINOD KUMAR	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of objections and rejections

1. Applicant's amendment filed in the paper of 11/02/2009 is entered.
2. Claims 1, 4, 11 and 12-15 are pending.
3. Claims 2-3 and 5-10 are cancelled.
4. Claims 11-13 are withdrawn from present examination.
5. Claims 1, 4 and 14-15 are examined on merits in the present Office action.
6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Rejection of claims 1, 4 and 14-15 under 35 U.S.C. 112, 1st paragraph (written description, new matter) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.
8. Rejection of claims 1, 4 and 14 and 15 under 35 U.S.C. 102(b) as being anticipated by Kasuga et al. (Nature Biotechnology, vol. 17, pp. 287-291, March 1999; Applicant's IDS) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.
9. Rejection of claims 1, 4 and 14 and 15 under 35 U.S.C. 102(b) as being anticipated by Shinozaki et al. is withdrawn in light of claim amendment filed in the paper of 11/02/2009.
10. Rejection of claims 1, 4 and 14-15 under 35 U.S.C. 102(b) as being anticipated by Shinozaki et al. (US Patent Number: 6,495,742; Issued December 17, 2002) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.

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11. Rejection of claims 1, 4 and 14-15 under 35 U.S.C. 102(e) as being anticipated by Shinozaki et al. (US Patent Number: 6,670,528; Issued December 30, 2003; filed April 28, 1999) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.

12. Rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Kasuga et al. (Nature Biotechnology, vol. 17, pp. 287-291, March 1999; Applicant's IDS) in view of Applicant's admitted stated of the prior art, Dalton et al. (Plant Science, 132:31-43, 1998) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.

13. Rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Shinozaki et al. (US Patent Number: 6,495,742; Issued December 17, 2002) in view of Applicant's admitted stated of the prior art, Dalton et al. (Plant Science, 132:31-43, 1998) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.

14. Rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Shinozaki et al. (US Patent Number: 6,670,528; Issued December 30, 2003; filed April 28, 1999) in view of Applicant's admitted stated of the prior art, Dalton et al. (Plant Science, 132:31-43, 1998) is withdrawn in light of claim amendment filed in the paper of 11/02/2009.

15. Rejection of claims 6 and 9 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of U.S. Patent No. 6,670,528 is withdrawn in light of cancellation of claims 6 and 9 filed in the paper of 11/02/2009.

16. Rejection of claims 6 and 9 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,495,742 is withdrawn in light of cancellation of claims 6 and 9 filed in the paper of 11/02/2009.

Election/restriction

17. Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

18. This application contains claims 11-13 drawn to an invention nonelected with traverse in the reply filed on August 30, 2007. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

19. Claims 1, 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasuga et al. (Nature Biotechnology, vol. 17, pp. 287-291, March 1999; Applicant's IDS) in view of Byrne et al. (US Patent No. 5584140; Issued 12/17/1999).

This rejection has been necessitated due to the claim amendment filed in the paper of 2/11/2009.

Kasuga et al. teach a transgenic plant and a method of making said transgenic plant comprising transformation of said plant with an expression vector comprising stress-inducible rd29A promoter operably linked to drive expression of a nucleotide sequence (100% sequence identity to instant DREB1A DNA or SEQ ID NO: 1) encoding stress-inducible and the DNA binding protein of DREB1A (SEQ ID NO: 2), wherein said DREB1A protein binds to a stress-

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responsive element of a stress-inducible promoter in response to environmental stresses like, freezing, drought or salt. The reference further teaches a recombinant vector, stress (drought, salt or freezing) tolerant transgenic plant and a method of producing said transgenic plant comprising said stress-inducible promoter operably linked with a stress inducible coding region of *Arabidopsis* CBF3 (a DREB transcription factor). The transgenic plants exhibited increased tolerance to salt and drought (dehydration) stresses. See in particular, page 287, abstract; page 288, figures 1 and 2; page 289, figures 3-5; page 290, table 1; 1st and 2nd columns of page 290; page 291, experimental protocol. It may be emphasized that DREB1A DNA used in Kasuga et al. has 100% sequence identity to instant SEQ ID NO: 1 which encodes a protein having 100% sequence identity to instant SEQ ID NO: 2. This is also cited in Kasuga et al. (see in particular, page 287, 2nd paragraph, right column).

Kasuga et al. do not teach obtaining a scion from a plant.

Byrne et al. teach a method of vegetative propagation of plants which involves obtaining scions from a mother plant and obtaining plants from said scions. See in particular claims 1-17; pages 1-13; Tables 1-3.

It would have been obvious and within the scope of an ordinary skill in the art to have produced scions from stress (drought, salt or freezing) resistant transgenic plants of Kasuga et al. for the purpose of clonal propagation of said plants using any method of obtaining scions including the one taught by Byrne et al. One of ordinary skill in the art would have been motivated to propagate the stress resistant transgenic plants by vegetative clonal propagation and thus eliminating the expensive and time consuming steps of plant tissue culture and transformation.

Thus, while one of ordinary skill in the art would have expressed Kasuga et al. DREB1A protein in a plant for the purpose of obtaining a stress resistant transgenic plant with improved characteristics as discussed above, it would have been obvious that said transgenic plant would have also exhibited any other characteristics including improved propagation efficiency of scions, improved propagation efficiency and rooting efficiency of scions or improved propagation efficiency of scions and prolonged vase life of cut flowers that are related to the property of Kasuga et al. DREB1A protein over-expression in said transgenic plant with a reasonable expectation of success.

Accordingly, the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

20. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kasuga et al. (Nature Biotechnology, vol. 17, pp. 287-291, March 1999; Applicant's IDS) in view of Byrne et al. (US Patent No. 5584140; Issued 12/17/1999) and applicant's admitted stated of the prior art, Dalton et al. (Plant Science, 132:31-43, 1998).

This rejection has been necessitated due to the claim amendment filed in the paper of 2/11/2009.

Kasuga et al. teachings are taught *supra*.

Byrne et al. teachings are taught *supra*.

Neither Kasuga et al. nor Byrne et al. teach silicon-carbide whisker based plant transformation.

It would have been obvious to use any method of plant transformation that were well known in the prior art as admitted by the Applicant (see specification at page 38, 3rd paragraph),

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including using the cited Dalton et al. silicon-carbide whisker based plant transformation method to arrive at the claimed invention with a reasonable expectation of success.

Accordingly, the claimed invention as a whole is prima facie obvious over the combined teachings of the prior art.

21. Claims 1, 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinozaki et al. (US Patent Number: 6,495,742; Issued December 17, 2002) in view of Byrne et al. (US Patent No. 5584140; Issued 12/17/1999).

This rejection has been necessitated due to the claim amendment filed in the paper of 2/11/2009.

Shinozaki et al. teach a transgenic plant and a method of making said transgenic plant comprising transformation of said plant with an expression vector comprising stress-inducible rd29A promoter operably linked to drive expression of a nucleotide sequence (100% sequence identity to instant DREB1A DNA or SEQ ID NO: 1) encoding stress-inducible and the DNA binding protein of DREB1A (SEQ ID NO: 2), wherein said DREB1A protein binds to a stress-responsive element of a stress-inducible promoter in response to environmental stresses like, freezing, drought or salt. The reference further teaches a recombinant vector, stress (drought, salt or freezing) tolerant transgenic plant and a method of producing said transgenic plant comprising said stress-inducible promoter operably linked with a stress inducible coding region of *Arabidopsis* CBF3 (a DREB transcription factor). The transgenic plants exhibited increased tolerance to salt and drought (dehydration) stresses. The reference also teaches making transformed plants of maize, rice, tobacco or carrot expressing the DNA disclosed in the reference. See in particular, columns 1-22; claims 1-6; figures 1-6; examples 1-6

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Shinozaki et al. do not teach obtaining a scion from a plant.

Byrne et al. teach a method of vegetative propagation of plants which involves obtaining scions from a mother plant and obtaining plants from said scions. See in particular claims 1-17; pages 1-13; Tables 1-3.

It would have been obvious and within the scope of an ordinary skill in the art to have produced scions from stress (drought, salt or freezing) resistant transgenic plants of Shinozaki et al. for the purpose of clonal propagation of said plants using any method of obtaining scions including the one taught by Byrne et al. One of ordinary skill in the art would have been motivated to propagate the stress resistant transgenic plants by vegetative clonal propagation and thus eliminating the expensive and time consuming steps of plant tissue culture and transformation.

Thus, while one of ordinary skill in the art would have expressed Shinozaki et al. DREB1A protein in a plant for the purpose of obtaining a stress resistant transgenic plant with improved characteristics as discussed above, it would have been obvious that said transgenic plant would have also exhibited any other characteristics including improved propagation efficiency of scions, improved propagation efficiency and rooting efficiency of scions or improved propagation efficiency of scions and prolonged vase life of cut flowers that are related to the property of Shinozaki et al. DREB1A protein over-expression in said transgenic plant with a reasonable expectation of success.

Accordingly, the claimed invention as a whole is prima facie obvious over the combined teachings of the prior art.

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22. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinozaki et al. (US Patent Number: 6,495,742; Issued December 17, 2002) in view of Byrne et al. (US Patent No. 5584140; Issued 12/17/1999) and applicant's admitted stated of the prior art, Dalton et al. (Plant Science, 132:31-43, 1998).

This rejection has been necessitated due to the claim amendment filed in the paper of 2/11/2009.

Shinozaki et al. teachings are taught *supra*.

Byrne et al. teachings are taught *supra*.

Neither Shinozaki et al. nor Byrne et al. teach silicon-carbide whisker based plant transformation.

It would have been obvious to use any method of plant transformation that were well known in the prior art as admitted by the Applicant (see specification at page 38, 3rd paragraph), including using the cited Dalton et al. silicon-carbide whisker based plant transformation method to arrive at the claimed invention with a reasonable expectation of success.

Accordingly, the claimed invention as a whole is prima facie obvious over the combined teachings of the prior art.

23. Claims 1, 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinozaki et al. (US Patent Number: 6,670,528; Issued December 30, 2003; filed April 28, 1999) in view of Byrne et al. (US Patent No. 5584140; Issued 12/17/1999).

This rejection has been necessitated due to the claim amendment filed in the paper of 2/11/2009.

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Shinozaki et al. teach a transgenic plant and a method of making said transgenic plant comprising transformation of said plant with an expression vector comprising stress-inducible rd29A promoter operably linked to drive expression of a nucleotide sequence (100% sequence identity to instant DREB1A DNA or SEQ ID NO: 1) encoding stress-inducible and the DNA binding protein of DREB1A (SEQ ID NO: 2), wherein said DREB1A protein binds to a stress-responsive element of a stress-inducible promoter in response to environmental stresses like, freezing, drought or salt. The reference further teaches a recombinant vector, stress (drought, salt or freezing) tolerant transgenic plant and a method of producing said transgenic plant comprising said stress-inducible promoter operably linked with a stress inducible coding region of *Arabidopsis* CBF3 (a DREB transcription factor). The transgenic plants exhibited increased tolerance to salt and drought (dehydration) stresses. The reference also teaches making transformed plants of maize, rice, tobacco or carrot expressing the DNA disclosed in the reference. See in particular, columns 1-19; claims 1-4; figures 1-10; examples 1-5; tables 1-3.

Byrne et al. teach a method of vegetative propagation of plants which involves obtaining scions from a mother plant and obtaining plants from said scions. See in particular claims 1-17; pages 1-13; Tables 1-3.

It would have been obvious and within the scope of an ordinary skill in the art to have produced scions from stress (drought, salt or freezing) resistant transgenic plants of Shinozaki et al. for the purpose of clonal propagation of said plants using any method of obtaining scions including the one taught by Byrne et al. One of ordinary skill in the art would have been motivated to propagate the stress resistant transgenic plants by vegetative clonal propagation and thus eliminating the expensive and time consuming steps of plant tissue culture and

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transformation.

Thus, while one of ordinary skill in the art would have expressed Shinozaki et al. DREB1A protein in a plant for the purpose of obtaining a stress resistant transgenic plant with improved characteristics as discussed above, it would have been obvious that said transgenic plant would have also exhibited any other characteristics including improved propagation efficiency of scions, improved propagation efficiency and rooting efficiency of scions or improved propagation efficiency of scions and prolonged vase life of cut flowers that are related to the property of Shinozaki et al. DREB1A protein over-expression in said transgenic plant with a reasonable expectation of success.

Accordingly, the claimed invention as a whole is prima facie obvious over the combined teachings of the prior art.

24. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinozaki et al. (US Patent Number: 6,670,528; Issued December 30, 2003; filed April 28, 1999) in view of Byrne et al. (US Patent No. 5584140; Issued 12/17/1999) and applicant's admitted stated of the prior art, Dalton et al. (Plant Science, 132:31-43, 1998).

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Neither Shinozaki et al. nor Byrne et al. teach silicon-carbide whisker based plant transformation.

It would have been obvious to use any method of plant transformation that were well known in the prior art as admitted by the Applicant (see specification at page 38, 3rd paragraph),

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including using the cited Dalton et al. silicon-carbide whisker based plant transformation method to arrive at the claimed invention with a reasonable expectation of success.

Accordingly, the claimed invention as a whole is prima facie obvious over the combined teachings of the prior art.

Conclusions

25. Claims 1, 4 and 14-15 are rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinod Kumar whose telephone number is (571) 272-4445. The examiner can normally be reached on 8.30 a.m. to 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Vinod Kumar/

Primary Examiner, Art Unit 1638